Report to the Auburn City Council

Action Item
Agenda Item No. 13

City Manager Approval

To: Honorable Mayor and City Council Members
From: Bernie Schroeder, Director of Public Works
Andy Heath, Director of Administrative Services
Date: May 23, 2011
Subject: Fiscal Year 2011-12 Sewer Service Charges

The Issue

Shall the City Council implement the scheduled sewer service charges as previously adopted?

Conclusion and Recommendation

Staff recommends that City Council, BY MOTION, implement the scheduled sewer service charges as adopted on June 25, 2007.

Background

On June 25, 2007, the City Council adopted a sewer rate study and an ordinance amendment that implemented sewer service charges for five years to provide funding for (1) the upgrade to the Wastewater Treatment Plant required by the 2005 NPDES (National Pollutant Discharge Elimination System) permit, (2) annual operating cost increases, and (3) ongoing and future capital requirements. The five year rate schedule covers the period beginning with Fiscal Year (FY) 2007-08 through FY 2011-12. On May 24, 2010, the City Council directed staff to halt the scheduled increase of the Sewer Service Use Charge for FY 2010-11 and keep rates unchanged at the FY 2009-10 levels. The adopted sewer service charges including last years amendment are shown in the following chart:

Monthly Sewer Service Charges
Fiscal Year 2009-10: $56.25 per Sewer Unit
Fiscal Year 2010-11: $56.25 per Sewer Unit
Subsequent Years: $60.50 per Sewer Unit

On February 3, 2011, the Central Valley Regional Water Quality Control Board adopted the City of Auburn's NPDES permit that provides regulatory requirements until 2015. The City of Auburn receives an NPDES permit every five years. Planning for what projects are on the horizon to meet these future requirements is critical and must start well in advance of when they

are needed. This was specifically considered when the Proposition 218 Hearings were conducted and the above rate structure was adopted in 2007.

This past week the Central Valley Clean Water Association held its annual conference as an opportunity for the staff from the California Regional Water Quality Control Board to provide information to discharges on what should be considered the highest priority in the coming years from a permitting standpoint. In turn, Staff has conducted a comprehensive review of the sewer budgets for FY 2011-12 through FY 2014-15 to identify both operating and capital project budget projections to meet these requirements. These priority projects were considered in light of known water quality objectives and specifically what projects will assist in achieving these goals for Auburn's next discharge permit. Specifically, the capital project budget projections incorporate collection system repairs, sewer lift station repairs/upgrades, WWTP repairs, and equipment replacements to ensure maintained compliance with the City's Sewer System Management Plan. The capital project list also incorporates the next major capital project that staff foresees - the need to replace the existing oxidation ditch. This project has been noted in the Auburn Wastewater Treatment Plant Master Plan and anticipated as an iron clad option for treating nitrogen in the future. The process of nitrifying and partially denitrifying is responsible for the removal of ammonia in the wastewater.

Staff estimates the cost of the Oxidation Ditch project to be approximately $ 4,800,000 (see attached Technical Memorandum: City of Auburn Secondary Treatment Options for the WWTP). The oxidation ditch currently is a 1.25 million gallon aeration basin built in 1975 which is operated to nitrify and partially denitrify the sewage. This aged structure is performing in a capacity not as it was originally intended and although it is meeting this purpose now its replacement would minimize any future concerns relating to nitrogen as well as provided much needed redundancy at the plant.

Additional Information

Each year the City is required to conduct a Public Hearing and adopt a resolution authorizing the collection of the City of Auburn Sewer Service Use Charges to be placed on the County of Placer Tax Roll. Due to noticing requirements for the public hearing, staff needs to prepare the annual FY 2011-12 Sewer Service Use Charge Report by the beginning of June to ensure the placement of the City of Auburn Sewer Service Use Charges on the County of Placer Tax Roll.

Analysis

Staff has prepared six possible rate alternatives for consideration by the City Council. As a means to compare the various rate scenarios considered for FY 2011-12, the following assumptions were built into each rate model:

Future Rate Increases -	2% increase each fiscal year after FY 11-12
Staff Costs -	3% increase each fiscal year after FY 11-12
Materials / Supplies / Services Costs -	5% increase each fiscal year after FY 11-12
Contract (WWTP) Operations Costs -	5% increase each fiscal year after FY 11-12

Each rate alternative also includes an assumption that all remaining bond proceeds from the recently completed wastewater facility upgrade will be expended on eligible capital projects by the end of FY 12-13.

Rate Alternatives

Three different rate levels previously approved via the Proposition 218 rate setting process implemented by the City Council in June 2007 are presented within the scope of this analysis. Staff has constructed estimated budgets through FY 2014-15 for each of the rate levels considered using two different capital funding scenarios – with and without a 20-year financing of the $5 million Oxidation Ditch project scheduled to begin in FY 2011-12. The following rate alternatives have been considered and are included as Exhibits to this report:

Funding of Oxidation Ditch using existing reserves

- Alternative #1 – Maintain current monthly rate of $56.25 per EDU *(Exhibit 1)*
- Alternative #2 – Raise monthly rate to $58.25 per EDU (postponed increase from FY 2010-11) *(Exhibit 2)*
- Alternative #3 – Raise monthly rate to $60.50 per EDU (scheduled increase for FY 2011-12) *(Exhibit 3)*

Funding of Oxidation Ditch using 20-year bond financing

- Alternative #4 – Maintain current monthly rate of $56.25 per EDU *(Exhibit 4)*
- Alternative #5 – Raise monthly rate to $58.25 per EDU (postponed increase from FY 2010-11) *(Exhibit 5)*
- Alternative #6 – Raise monthly rate to $60.50 per EDU (scheduled increase for FY 2011-12) *(Exhibit 6)*

Key Criteria to Consider within Scope of Rate Analysis

Each of the six rate alternatives should be evaluated within the context of the following key criteria:

1. Ability to maintain current levels of Sewer Fund "designated" reserves. Designated reserves include $1.995 million for WWTP UV Disinfection (has been recently considered as "buy-in" capital available towards the potential regionalization of wastewater operations), $250,000 for the Regionalization Study effort, and applicable debt service reserves consistent with loan and bond covenants.
2. The Sewer Fund has the ability to fully fund or finance the $5 million Oxidation Ditch project scheduled to begin in FY 2011-12, without compromising designated reserves.
3. The Sewer Fund operating margin (net from operations) is able to cover annual costs for as-needed capital maintenance and new capital infrastructure and outlay (average annual expenditure of $1.2 million over last five years).
4. Ability to maintain appropriate level of discretionary fund balance (undesignated reserves) as a means to assure the solvency of the Sewer Fund in recognition of the City's aging sewer infrastructure and a sometimes unpredictable regulatory environment.

Given these goals, the following table compares each of the six alternatives presented above. Information in this table will form the basis for a presentation by staff during the City Council meeting.

	Fund Oxidation Ditch with Reserves / Fund Balance			Finance Oxidation Ditch		
	Alt #1	**Alt #2**	**Alt #3**	**Alt #4**	**Alt #5**	**Alt #6**
Proposed Rate ($/month/EDU)	***$56.25***	***$58.25***	***$60.50***	***$56.25***	***$58.25***	***$60.50***
- Maintains all Designated Reserves	NO	NO	YES	YES	YES	YES
- Ability to Fund Oxidation Ditch	NO	NO	YES	YES	YES	YES
- Operating Margin at or near 5-year average capital expenditure level ($1.2 million)	YES	YES	YES	NO	NO	YES
- Stable Discretionary Fund Balance for Contingencies	NO	NO	NO	NO	YES	YES

Alternatives Available to Council; Implications of Alternatives

1. Proceed with Staff Recommendation
2. Do not proceed with staff recommendation

Fiscal Impact

The fiscal impact for each of the rate alternatives presented above is detailed in attached exhibits.

Exhibits: ***Sewer Enterprise 5 Year Budget Projections (Exhibit #1-6)***
Sewer Enterprise Budget Capital Expenditure Detail
Technical Memorandum: City of Auburn Secondary Treatment Options for the WWTP

City of Auburn
Fiscal Year 2011-12 Budget
Sewer Enterprise Fund (Fund 11)

Rate @ FY 2011/12 $ 56.25

EXHIBIT #1

	ACTUAL 2008-09	ACTUAL 2009-10	BUDGET 2010-11	AS OF 04/13/11 ESTIMATED 2010-11	BUDGET FY 2011-12	BUDGET FY 2012-13	BUDGET FY 2013-14	BUDGET FY 2014-15
Revenues:								
Sewer Service Charges	$ 4,295,472	4,610,457	4,570,000	4,650,000	4,571,775	4,663,211	4,756,475	4,851,604
Sewer Connection Fees	38,602	29,081	10,000	42,203	35,000	35,000	35,000	35,000
Sewer Development Fees	-	(33,456)	-	-	-	-	-	-
Interest Income	131,699	162,832	150,000	100,000	125,000	100,000	30,000	-
Miscellaneous Income	64,800	-	-	-	-	-	-	-
Debt Proceeds	-	8,213,768	-	-	-	-	-	-
Total:	$ 4,530,573	12,982,682	4,730,000	4,792,203	4,731,775	4,798,211	4,821,475	4,886,604
Expenditures:								
Administrative Expense - Staff Costs	$ 200,823	223,808	250,000	238,500	350,000	360,500	371,315	382,454
Materials and Services	478,355	311,353	390,550	338,861	400,000	420,000	441,000	463,050
Contract Operations	1,560,657	1,677,244	1,610,000	1,575,000	1,700,000	1,785,000	1,874,250	1,967,963
Debt Service	282,234	927,440	853,734	853,734	853,734	853,734	853,734	853,734
Capital Projects	1,872,143	4,899,885	2,846,000	3,093,750	2,330,000	2,185,000	3,185,000	3,390,000
Capital Outlay	10,350	41,455	110,000	97,932	85,000	112,000	80,000	103,333
Mandatory Minimum Penalties	-	-	100,000	141,000	-	-	-	-
Bond Closing Costs	-	-	-	-	-	-	-	-
Total:	$ 4,404,562	8,081,185	6,160,284	6,338,777	5,718,734	5,716,234	6,805,299	7,160,534
Excess (deficit) of revenues over expenditures	$ 126,011	4,901,497	(1,430,284)	(1,546,574)	(986,959)	(918,024)	(1,983,824)	(2,273,930)
Beginning Fund Balance	4,560,370	4,686,381	9,587,878	9,587,878	8,041,304	7,054,345	6,136,322	4,152,497
Less:								
Reserve for WWTP UV Disinfection	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000
Reserve for Regionalization Study	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Reserve for WWTP Upgrade Project	-	3,317,903	1,545,772	1,017,903	450,000	-	-	-
General Reserve (8%) - SWRCB Loans	201,431	282,234	282,234	282,234	282,234	282,234	282,234	282,234
Debt Service Reserve - Upgrade Project Bonds	-	557,752	557,752	557,752	557,752	557,752	557,752	557,752
Ending Fund Balance	$ 2,239,950	3,184,989	3,526,836	3,938,415	3,519,359	3,051,336	1,067,511	(1,206,419)
NET FROM OPERATIONS	*$ 1,959,552*	*$ 1,591,989*	*$ 1,405,716*	*$ 1,504,973*	*$ 1,308,041*	*$ 1,231,977*	*$ 1,166,176*	*$ 1,081,070*

Personal Services Allocation

	AUTHORIZED 2008-09	AUTHORIZED 2009-10	AUTHORIZED 2010-11	PROPOSED 2011-12
Associate Civil Engineer	1.0	1.0	1.0	1.0
Engineering Tech II	1.0	1.0	1.0	1.0
Maintenance Worker II	0.0	1.0	1.0	2.0
Mechanic	0.0	0.0	0.0	0.5
Total:	2.0	2.0	3.0	4.5

City of Auburn
Fiscal Year 2011-12 Budget
Sewer Enterprise Fund (Fund 11)

Rate @ FY 2011/12 $ 58.25

EXHIBIT #2

	ACTUAL 2008-09	ACTUAL 2009-10	BUDGET 2010-11	AS OF 04/13/11 ESTIMATED 2010-11	BUDGET FY 2011-12	BUDGET FY 2012-13	BUDGET FY 2013-14	BUDGET FY 2014-15
Revenues:								
Sewer Service Charges	$ 4,295,472	4,610,457	4,570,000	4,650,000	4,734,327	4,829,014	4,925,594	5,024,106
Sewer Connection Fees	38,602	29,081	10,000	42,203	35,000	35,000	35,000	35,000
Sewer Development Fees	-	(33,456)	-	-	-	-	-	-
Interest Income	131,699	162,832	150,000	100,000	125,000	100,000	30,000	-
Miscellaneous Income	64,800	-	-	-	-	-	-	-
Debt Proceeds	-	8,213,768	-	-	-	-	-	-
Total:	$ 4,530,573	12,982,682	4,730,000	4,792,203	4,894,327	4,964,014	4,990,594	5,059,106
Expenditures:								
Administrative Expense - Staff Costs	$ 200,823	223,808	250,000	238,500	350,000	360,500	371,315	382,454
Materials and Services	478,355	311,353	390,550	338,861	400,000	420,000	441,000	463,050
Contract Operations	1,560,657	1,677,244	1,610,000	1,575,000	1,700,000	1,785,000	1,874,250	1,967,963
Debt Service	282,234	927,440	853,734	853,734	853,734	853,734	853,734	853,734
Capital Projects	1,872,143	4,899,885	2,846,000	3,093,750	2,330,000	2,185,000	3,185,000	3,390,000
Capital Outlay	10,350	41,455	110,000	97,932	85,000	112,000	80,000	103,333
Mandatory Minimum Penalties	-	-	100,000	141,000	-	-	-	-
Bond Closing Costs	-	-	-	-	-	-	-	-
Total:	$ 4,404,562	8,081,185	6,160,284	6,338,777	5,718,734	5,716,234	6,805,299	7,160,534
Excess (deficit) of revenues over expenditures	$ 126,011	4,901,497	(1,430,284)	(1,546,574)	(824,407)	(752,220)	(1,814,705)	(2,101,428)
Beginning Fund Balance	4,560,370	4,686,381	9,587,878	9,587,878	8,041,304	7,216,897	6,464,677	4,649,971
Less:								
Reserve for WWTP UV Disinfection	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000
Reserve for Regionalization Study	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Reserve for WWTP Upgrade Project	-	3,317,903	1,545,772	1,017,903	450,000	-	-	-
General Reserve (8%) - SWRCB Loans	201,431	282,234	282,234	282,234	282,234	282,234	282,234	282,234
Debt Service Reserve - Upgrade Project Bonds	-	557,752	557,752	557,752	557,752	557,752	557,752	557,752
Ending Fund Balance	$ 2,239,950	3,184,989	3,526,836	3,938,415	3,681,911	3,379,691	1,564,985	(536,443)
NET FROM OPERATIONS	*$ 1,959,552*	*$ 1,591,989*	*$ 1,405,716*	*$ 1,504,973*	*$ 1,470,593*	*$ 1,397,780*	*$ 1,335,295*	*$ 1,253,572*

Personal Services Allocation

	AUTHORIZED 2008-09	AUTHORIZED 2009-10	AUTHORIZED 2010-11	PROPOSED 2011-12
Associate Civil Engineer	1.0	1.0	1.0	1.0
Engineering Tech II	1.0	1.0	1.0	1.0
Maintenance Worker II	0.0	1.0	1.0	2.0
Mechanic	0.0	0.0	0.0	0.5
Total:	2.0	2.0	3.0	4.5

City of Auburn
Fiscal Year 2011-12 Budget
Sewer Enterprise Fund (Fund 11)

Rate @ FY 2011/12 $ 60.50

EXHIBIT #3

	ACTUAL 2008-09	ACTUAL 2009-10	BUDGET 2010-11	AS OF 04/13/11 ESTIMATED 2010-11	BUDGET FY 2011-12	BUDGET FY 2012-13	BUDGET FY 2013-14	BUDGET FY 2014-15
Revenues:								
Sewer Service Charges	$ 4,295,472	4,610,457	4,570,000	4,650,000	4,917,198	5,015,542	5,115,853	5,218,170
Sewer Connection Fees	38,602	29,081	10,000	42,203	35,000	35,000	35,000	35,000
Sewer Development Fees	-	(33,456)	-	-	-	-	-	-
Interest Income	131,699	162,832	150,000	100,000	125,000	100,000	30,000	-
Miscellaneous Income	64,800	-	-	-	-	-	-	-
Debt Proceeds	-	8,213,768	-	-	-	-	-	-
Total:	$ 4,530,573	12,982,682	4,730,000	4,792,203	5,077,198	5,150,542	5,180,853	5,253,170
Expenditures:								
Administrative Expense - Staff Costs	$ 200,823	223,808	250,000	238,500	350,000	360,500	371,315	382,454
Materials and Services	478,355	311,353	390,550	338,861	400,000	420,000	441,000	463,050
Contract Operations	1,560,657	1,677,244	1,610,000	1,575,000	1,700,000	1,785,000	1,874,250	1,967,963
Debt Service	282,234	927,440	853,734	853,734	853,734	853,734	853,734	853,734
Capital Projects	1,872,143	4,899,885	2,846,000	3,093,750	2,330,000	2,185,000	3,185,000	3,390,000
Capital Outlay	10,350	41,455	110,000	97,932	85,000	112,000	80,000	103,333
Mandatory Minimum Penalties	-	-	100,000	141,000	-	-	-	-
Bond Closing Costs	-	-	-	-	-	-	-	-
Total:	$ 4,404,562	8,081,185	6,160,284	6,338,777	5,718,734	5,716,234	6,805,299	7,160,534
Excess (deficit) of revenues over expenditures	$ 126,011	4,901,497	(1,430,284)	(1,546,574)	(641,536)	(565,692)	(1,624,446)	(1,907,364)
Beginning Fund Balance	4,560,370	4,686,381	9,587,878	9,587,878	8,041,304	7,399,768	6,834,076	5,209,630
Less:								
Reserve for WWTP UV Disinfection	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000
Reserve for Regionalization Study	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Reserve for WWTP Upgrade Project	-	3,317,903	1,545,772	1,017,903	450,000	-	-	-
General Reserve (8%) - SWRCB Loans	201,431	282,234	282,234	282,234	282,234	282,234	282,234	282,234
Debt Service Reserve - Upgrade Project Bonds	-	557,752	557,752	557,752	557,752	557,752	557,752	557,752
Ending Fund Balance	$ 2,239,950	3,184,989	3,526,836	3,938,415	3,864,782	3,749,090	2,124,644	217,280
NET FROM OPERATIONS	*$ 1,959,552*	*$ 1,591,989*	*$ 1,405,716*	*$ 1,504,973*	*$ 1,653,464*	*$ 1,584,308*	*$ 1,525,554*	*$ 1,447,636*

Personal Services Allocation

	AUTHORIZED 2008-09	AUTHORIZED 2009-10	AUTHORIZED 2010-11	PROPOSED 2011-12
Associate Civil Engineer	1.0	1.0	1.0	1.0
Engineering Tech II	1.0	1.0	1.0	1.0
Maintenance Worker II	0.0	1.0	1.0	2.0
Mechanic	0.0	0.0	0.0	0.5
Total:	2.0	2.0	3.0	4.5

City of Auburn
Fiscal Year 2011-12 Budget
Sewer Enterprise Fund (Fund 11)

With 20-Year Financing of Oxidation Ditch

Rate @ FY 2011/12 $ 56.25

EXHIBIT #4

	ACTUAL 2008-09	ACTUAL 2009-10	BUDGET 2010-11	AS OF 04/13/11 ESTIMATED 2010-11	BUDGET FY 2011-12	BUDGET FY 2012-13	BUDGET FY 2013-14	BUDGET FY 2014-15
Revenues:								
Sewer Service Charges	$ 4,295,472	4,610,457	4,570,000	4,650,000	4,571,775	4,663,211	4,756,475	4,851,604
Sewer Connection Fees	38,602	29,081	10,000	42,203	35,000	35,000	35,000	35,000
Sewer Development Fees	-	(33,456)	-	-	-	-	-	-
Interest Income	131,699	162,832	150,000	100,000	125,000	100,000	30,000	-
Miscellaneous Income	64,800	-	-	-	-	-	-	-
Debt Proceeds	-	8,213,768	-	-	-	5,000,000	-	-
Total:	$ 4,530,573	12,982,682	4,730,000	4,792,203	4,731,775	9,798,211	4,821,475	4,886,604
Expenditures:								
Administrative Expense - Staff Costs	$ 200,823	223,808	250,000	238,500	350,000	360,500	371,315	382,454
Materials and Services	478,355	311,353	390,550	338,861	400,000	420,000	441,000	463,050
Contract Operations	1,560,657	1,677,244	1,610,000	1,575,000	1,700,000	1,785,000	1,874,250	1,967,963
Debt Service	282,234	927,440	853,734	853,734	853,734	1,286,054	1,286,054	1,286,054
Capital Projects	1,872,143	4,899,885	2,846,000	3,093,750	2,330,000	2,185,000	3,185,000	3,390,000
Capital Outlay	10,350	41,455	110,000	97,932	85,000	112,000	80,000	103,333
Mandatory Minimum Penalties	-	-	100,000	141,000	-	-	-	-
Bond Closing Costs	-	-	-	-	-	-	-	-
Total:	$ 4,404,562	8,081,185	6,160,284	6,338,777	5,718,734	6,148,554	7,237,619	7,592,854
Excess (deficit) of revenues over expenditures	$ 126,011	4,901,497	(1,430,284)	(1,546,574)	(986,959)	3,649,657	(2,416,144)	(2,706,250)
Beginning Fund Balance	4,560,370	4,686,381	9,587,878	9,587,878	8,041,304	7,054,345	10,704,002	8,287,857
Less:								
Reserve for WWTP UV Disinfection	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000
Reserve for Regionalization Study	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Reserve for WWTP Upgrade Project	-	3,317,903	1,545,772	1,017,903	450,000	4,400,000	2,300,000	200,000
General Reserve (8%) - SWRCB Loans	201,431	282,234	282,234	282,234	282,234	282,234	282,234	282,234
Debt Service Reserve - Upgrade Project Bonds	-	557,752	557,752	557,752	557,752	990,072	990,072	990,072
Ending Fund Balance	$ 2,239,950	3,184,989	3,526,836	3,938,415	3,519,359	2,786,696	2,470,551	1,864,301
NET FROM OPERATIONS	*$ 1,959,552*	*$ 1,591,989*	*$ 1,405,716*	*$ 1,504,973*	*$ 1,308,041*	*$ 799,657*	*$ 733,856*	*$ 648,750*

Personal Services Allocation

	AUTHORIZED 2008-09	AUTHORIZED 2009-10	AUTHORIZED 2010-11	PROPOSED 2011-12
Associate Civil Engineer	1.0	1.0	1.0	1.0
Engineering Tech II	1.0	1.0	1.0	1.0
Maintenance Worker II	0.0	1.0	1.0	2.0
Mechanic	0.0	0.0	0.0	0.5
Total:	2.0	2.0	3.0	4.5

City of Auburn
Fiscal Year 2011-12 Budget
Sewer Enterprise Fund (Fund 11)

With 20-Year Financing of Oxidation Ditch

Rate @ FY 2011/12	*$ 58.25*

EXHIBIT #5

	ACTUAL 2008-09	ACTUAL 2009-10	BUDGET 2010-11	AS OF 04/13/11 ESTIMATED 2010-11	BUDGET FY 2011-12	BUDGET FY 2012-13	BUDGET FY 2013-14	BUDGET FY 2014-15
Revenues:								
Sewer Service Charges	$ 4,295,472	4,610,457	4,570,000	4,650,000	4,734,327	4,829,014	4,925,594	5,024,106
Sewer Connection Fees	38,602	29,081	10,000	42,203	35,000	35,000	35,000	35,000
Sewer Development Fees	-	(33,456)	-	-	-	-	-	-
Interest Income	131,699	162,832	150,000	100,000	125,000	100,000	30,000	-
Miscellaneous Income	64,800	-	-	-	-	-	-	-
Debt Proceeds	-	8,213,768	-	-	-	5,000,000	-	-
Total:	$ 4,530,573	12,982,682	4,730,000	4,792,203	4,894,327	9,964,014	4,990,594	5,059,106
Expenditures:								
Administrative Expense - Staff Costs	$ 200,823	223,808	250,000	238,500	350,000	360,500	371,315	382,454
Materials and Services	478,355	311,353	390,550	338,861	400,000	420,000	441,000	463,050
Contract Operations	1,560,657	1,677,244	1,610,000	1,575,000	1,700,000	1,785,000	1,874,250	1,967,963
Debt Service	282,234	927,440	853,734	853,734	853,734	1,286,054	1,286,054	1,286,054
Capital Projects	1,872,143	4,899,885	2,846,000	3,093,750	2,330,000	2,185,000	3,185,000	3,390,000
Capital Outlay	10,350	41,455	110,000	97,932	85,000	112,000	80,000	103,333
Mandatory Minimum Penalties	-	-	100,000	141,000	-	-	-	-
Bond Closing Costs	-	-	-	-	-	-	-	-
Total:	$ 4,404,562	8,081,185	6,160,284	6,338,777	5,718,734	6,148,554	7,237,619	7,592,854
Excess (deficit) of revenues over expenditures	$ 126,011	4,901,497	(1,430,284)	(1,546,574)	(824,407)	3,815,460	(2,247,025)	(2,533,748)
Beginning Fund Balance	4,560,370	4,686,381	9,587,878	9,587,878	8,041,304	7,216,897	11,032,357	8,785,331
Less:								
Reserve for WWTP UV Disinfection	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000
Reserve for Regionalization Study	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Reserve for WWTP Upgrade Project	-	3,317,903	1,545,772	1,017,903	450,000	4,400,000	2,300,000	200,000
General Reserve (8%) - SWRCB Loans	201,431	282,234	282,234	282,234	282,234	282,234	282,234	282,234
Debt Service Reserve - Upgrade Project Bonds	-	557,752	557,752	557,752	557,752	990,072	990,072	990,072
Ending Fund Balance	$ 2,239,950	3,184,989	3,526,836	3,938,415	3,681,911	3,115,051	2,968,025	2,534,277
NET FROM OPERATIONS	*$ 1,959,552*	*$ 1,591,989*	*$ 1,405,716*	*$ 1,504,973*	*$ 1,470,593*	*$ 965,460*	*$ 902,975*	*$ 821,252*

Personal Services Allocation

	AUTHORIZED 2008-09	AUTHORIZED 2009-10	AUTHORIZED 2010-11	PROPOSED 2011-12
Associate Civil Engineer	1.0	1.0	1.0	1.0
Engineering Tech II	1.0	1.0	1.0	1.0
Maintenance Worker II	0.0	1.0	1.0	2.0
Mechanic	0.0	0.0	0.0	0.5
Total:	2.0	2.0	3.0	4.5

City of Auburn
Fiscal Year 2011-12 Budget
Sewer Enterprise Fund (Fund 11)

With 20-Year Financing of Oxidation Ditch

Rate @ FY 2011/12 $ 60.50

EXHIBIT #6

	ACTUAL 2008-09	ACTUAL 2009-10	BUDGET 2010-11	AS OF 04/13/11 ESTIMATED 2010-11	BUDGET FY 2011-12	BUDGET FY 2012-13	BUDGET FY 2013-14	BUDGET FY 2014-15
Revenues:								
Sewer Service Charges	$ 4,295,472	4,610,457	4,570,000	4,650,000	4,917,198	5,015,542	5,115,853	5,218,170
Sewer Connection Fees	38,602	29,081	10,000	42,203	35,000	35,000	35,000	35,000
Sewer Development Fees	-	(33,456)	-	-	-	-	-	-
Interest Income	131,699	162,832	150,000	100,000	125,000	100,000	30,000	-
Miscellaneous Income	64,800	-	-	-	-	-	-	-
Debt Proceeds	-	8,213,768	-	-	-	5,000,000	-	-
Total:	$ 4,530,573	12,982,682	4,730,000	4,792,203	5,077,198	10,150,542	5,180,853	5,253,170
Expenditures:								
Administrative Expense - Staff Costs	$ 200,823	223,808	250,000	238,500	350,000	360,500	371,315	382,454
Materials and Services	478,355	311,353	390,550	338,861	400,000	420,000	441,000	463,050
Contract Operations	1,560,657	1,677,244	1,610,000	1,575,000	1,700,000	1,785,000	1,874,250	1,967,963
Debt Service	282,234	927,440	853,734	853,734	853,734	1,286,054	1,286,054	1,286,054
Capital Projects	1,872,143	4,899,885	2,846,000	3,093,750	2,330,000	2,185,000	3,185,000	3,390,000
Capital Outlay	10,350	41,455	110,000	97,932	85,000	112,000	80,000	103,333
Mandatory Minimum Penalties	-	-	100,000	141,000	-	-	-	-
Bond Closing Costs	-	-	-	-	-	-	-	-
Total:	$ 4,404,562	8,081,185	6,160,284	6,338,777	5,718,734	6,148,554	7,237,619	7,592,854
Excess (deficit) of revenues over expenditures	$ 126,011	4,901,497	(1,430,284)	(1,546,574)	(641,536)	4,001,988	(2,056,766)	(2,339,684)
Beginning Fund Balance	4,560,370	4,686,381	9,587,878	9,587,878	8,041,304	7,399,768	11,401,756	9,344,990
Less:								
Reserve for WWTP UV Disinfection	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000	1,995,000
Reserve for Regionalization Study	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Reserve for WWTP Upgrade Project	-	3,317,903	1,545,772	1,017,903	450,000	4,400,000	2,300,000	200,000
General Reserve (8%) - SWRCB Loans	201,431	282,234	282,234	282,234	282,234	282,234	282,234	282,234
Debt Service Reserve - Upgrade Project Bonds	-	557,752	557,752	557,752	557,752	990,072	990,072	990,072
Ending Fund Balance	$ 2,239,950	3,184,989	3,526,836	3,938,415	3,864,782	3,484,450	3,527,684	3,288,000
NET FROM OPERATIONS	*$ 1,959,552*	*$ 1,591,989*	*$ 1,405,716*	*$ 1,504,973*	*$ 1,653,464*	*$ 1,151,988*	*$ 1,093,234*	*$ 1,015,316*

Personal Services Allocation

	AUTHORIZED 2008-09	AUTHORIZED 2009-10	AUTHORIZED 2010-11	PROPOSED 2011-12
Associate Civil Engineer	1.0	1.0	1.0	1.0
Engineering Tech II	1.0	1.0	1.0	1.0
Maintenance Worker II	0.0	1.0	1.0	2.0
Mechanic	0.0	0.0	0.0	0.5
Total:	2.0	2.0	3.0	4.5

City of Auburn
Fiscal Year 2011-12 Budget
Sewer Enterprise Fund (Fund 11)
Capital Expenditure Detail

APPLICABLE TO ALL EXHIBITS

Capital Expenditures	ACTUAL 2008-09	ACTUAL 2009-10	BUDGET 2010-11	AS OF 04/13/11 ESTIMATED 2010-11	BUDGET FY 2011-12	BUDGET FY 2012-13	BUDGET FY 2013-14	BUDGET FY 2014-15
63856 - Auburn Ravine Sampling	$ 6,729	8,443	10,000	5,000	10,000	10,000	10,000	10,000
63871 - Old WWTP Demolition	-	-	6,000	-	10,000	50,000	200,000	150,000
63894 - Village Lane/Fulweiler Sewer	-	234	-	-	-			
63895 - Lift Station Repairs	46,326	11,232	20,000	18,000	20,000	20,000	20,000	20,000
63897 - Canyon Court / Foresthill Ave.	1,412	-	-	-	-			
63898 - North McDaniel / Skyridge Sewer	8,357	-	-	-	-			
63899 - Emergency Sewer Repair Projects	623,474	446,417	500,000	200,000	500,000	500,000	550,000	550,000
63901 - Sewer Map Updates	6,608	820	10,000	1,500	10,000	10,000	10,000	10,000
63902 - Prospector Hill Sewer Projects	9,094	-	-	-	-			
63903 - WWTP - Repairs / Projects	129,215	47,234	100,000	2,000	50,000	50,000	50,000	50,000
63913 - Gunite Ditch - WWTP	3,077	-	15,000	-	-			
63914 - NPDES Permit Renewal	917	2,934	100,000	25,000	50,000		50,000	
65001 - Back Flow Preventer Device	-	-	10,000	2,000	-			
65008 - Vintage Oaks Liftstation	482,820	448,181	100,000	50,000	-			
63702 - WWTP Upgrade / UV Project	482,795	3,840,563	1,400,000	2,300,000	125,000			
63703 - Falcons Point Lift Station	37,194	25,174	200,000	430,000	75,000			
66000 - Jury Parking Lot	-	25,034	-	-	-			
66003 - Vactor / Vactor Truck Repower	34,125	22,232	-	250	-			300,000
63896 - WWTP Solar Project	-	21,387	-	-	-			
XXXXX - WWTP SCADA Improvements	-	-	-	-	-			
XXXXX - WWTP Pond Improvements	-	-	-	-	-			
XXXXX - WWTP Replacement Storage	-	-	-	-	-	-	-	-
XXXXX - SSMP Updates	-	-	-	-	10,000	10,000	10,000	10,000
XXXXX - Belt Press Improvements	-	-	180,000	25,000	250,000			
XXXXX - Electric Street Sewer	-	-	50,000	10,000	50,000	600,000		
XXXXX - Monticello Lift Station	-	-	65,000	-	-	150,000		
XXXXX - Auburn Oaks Lift Station	-	-	80,000	25,000	900,000	-		
XXXXX - Vista de Val Lift Station	-	-	-	-	-	-	150,000	
XXXXX - Diamond Ridge Lift Station	-	-	-	-	10,000	-	-	150,000
XXXXX - Southridge Lift Station	-	-	-	-	-	-	-	-
XXXXX - Pond 1B Lift Station	-	-	-	-	-	300,000		
XXXXX - Oxidation Ditch	-	-	-	-	150,000	450,000	2,100,000	2,100,000
XXXXX - Aeration Improvements	-	-	-	-	25,000	-		
XXXXX - Contract Operations RFP	-	-	-	-	50,000	-		
XXXXX - Source Control Program	-	-	-	-	20,000	20,000	20,000	25,000
XXXXX - I&I Reduction Program	-	-	-	-	15,000	15,000	15,000	15,000
Total:	$ 1,872,143	4,899,885	2,846,000	3,093,750	2,330,000	2,185,000	3,185,000	3,390,000

Technical Memorandum

City of Auburn
Topic: Secondary Treatment Options for the WWTP

PREPARED FOR: Bernie Schroeder / City of Auburn Director of Public Works

PREPARED BY: Dan Rich, P.E., NEXGEN

DATE: April 20, 2011

The purpose of this memo is to summarize the City of Auburn's (City's) options related to secondary treatment enhancements and compliance with new nitrogen limitations within its Waste Discharge Requirements (Order No. R5-2010-0090).

The City's discharge permit now includes the following compliance limits for effluent nitrogen:

- 10 mg/L nitrate–N as a maximum monthly average
- 1.9 mg/L ammonia-N as a maximum monthly average
- 5.8 mg/L ammonia-N as a daily maximum condition

Existing Secondary Treatment Facilities and Performance

The City uses an oxidation ditch activated sludge system for secondary treatment. The system is comprised of an oxidation ditch, three secondary clarifiers, and a return sludge pump station. The existing facilities are shown in Figure 1. The oxidation ditch, return sludge pump station, and secondary clarifier no. 1 were constructed in 1975. Clarifier no. 2 was constructed in 1988 and clarifier no. 3 was added in 2010. The return sludge pump station was also rehabilitated in 2010.

The existing oxidation ditch is a 1.25 million gallon aeration basin. It is constructed of 6-inch thick reinforced gunite sloped walls. The water depth is about 12 feet. Since there is only one basin it cannot be taken out of service. The ditch uses 2-50 horsepower brush rotors aerators that sit on top of the water. The brushes, gear boxes, and motors have been rehabilitated several times since 1975. In 2010, the City added a 20 horsepower floating brush aerator to be used when the other rotors are being repaired and during high air temperatures when aeration efficiencies are reduced.

Dry weather flows into the WWTP are currently about 1.2 million gallons per day (mgd). The plant and oxidation ditch have a permitted capacity to treat 1.67 mgd. Oxidation ditches are designed to operate in what is referred to as "extended aeration" mode. This means the bacteria are maintained at sludge ages greater than 15 days to fully biologically oxidize the wastewater.

NEXGEN

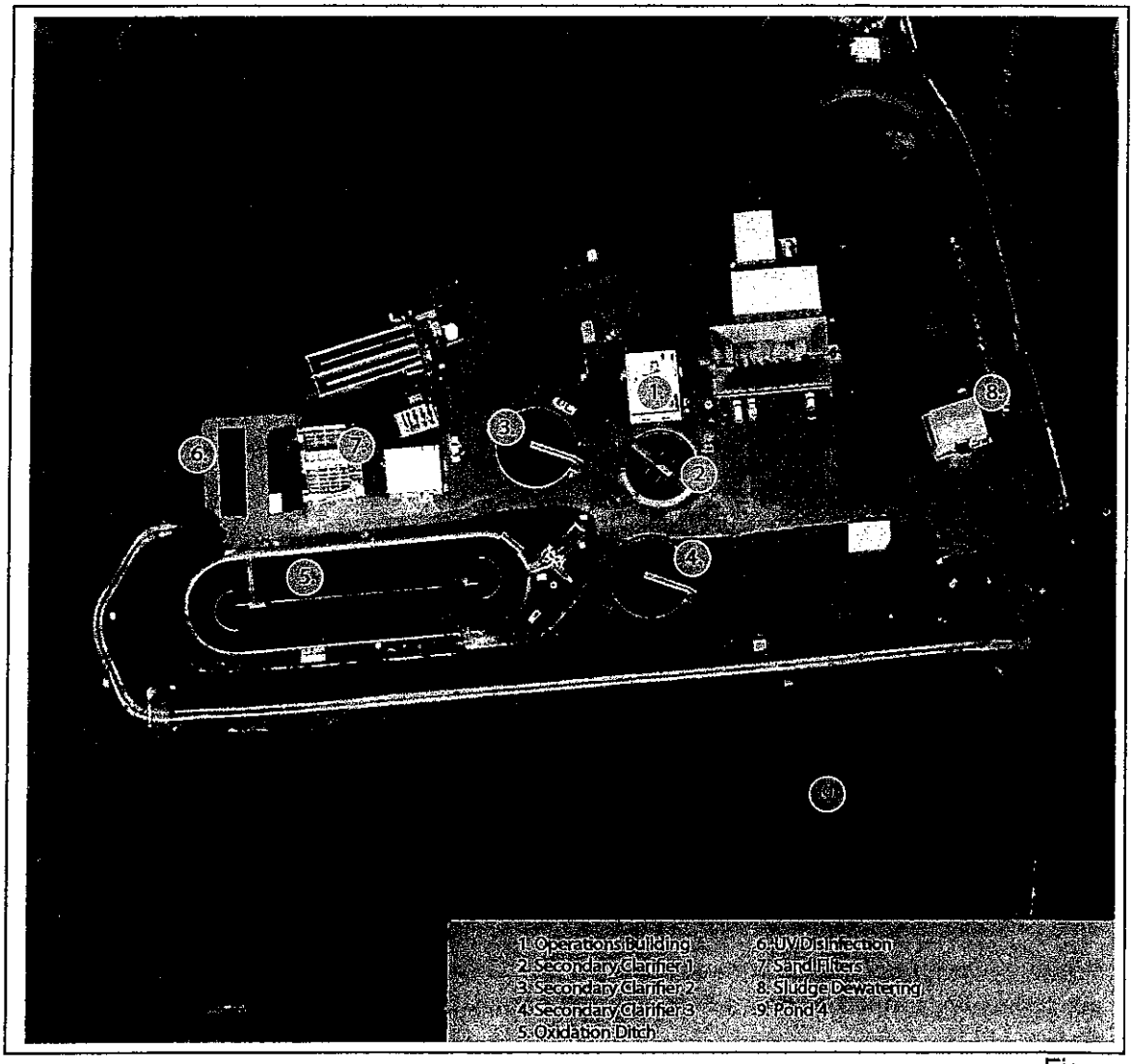

Figure 1
Existing City of Auburn WWTP

To meet the new effluent nitrogen limits, the ditch is currently operated to nitrify and partially denitrify by timing the aeration rotors to sequence on and off. While the aerators are on, the system nitrifies (bacteria oxidize ammonia to nitrate). When turned off, the system denitrifies (bacteria use nitrate as their oxygen source and nitrate is converted to nitrogen gas).

To date, the system has performed well and is in general compliance with the new nitrogen limits. Because the ditch was not originally designed to reduce nitrogen to the levels in the permit the City has been monitoring how reliably the process works when colder temperatures and elevated wet weather flows reduce nitrification efficiency. The City is required to report back to the Regional Water Board in late 2011 if further enhancements are needed to comply with the ammonia nitrogen limits. If needed, the City has until September of 2014 to be in full compliance with the new ammonia limits.

Concerns Regarding Long-Term Operation of the Existing Oxidation Ditch

There are three primary concerns with long-term operation of the existing oxidation ditch:

1. Reliability / redundancy issues with one older oxidation ditch in service
2. Ability to meet effluent nitrogen limits during cold weather periods with one ditch
3. Ability to meet effluent nitrogen limits as the City grows and flows approach 1.67 mgd with one ditch

1. Reliability / Redundancy Issues with One Older Oxidation Ditch in Service

The oxidation ditch has provided reliable treatment for the past 35 years and has never been taken out of service. As the facility ages, the risk for problems also increase. These are not quantifiable risks in part because the basin cannot be taken out of service to inspect its condition, but the risks exist nonetheless. Reliability and redundancy concerns include:

- **Accumulation of debris (grit, rocks, trash) at the bottom of the ditch will reduce treatment capacity (volume).** As an example, the City of Woodland has four oxidation ditches at its WWTP. Every few years they take a ditch out of service and must remove several feet of grit and trash that have accumulated along the bottom
- **Condition of the concrete structure.** It is typical to assume concrete structures in WWTPs have a useful life of about 50 years without some form of rehabilitation. This basin is constructed of 6-inch reinforced gunite sloped walls, which is considered less substantial than typical 12-inch thick concrete walls used for most structures. Since the basin cannot be taken out of service to determine the actual structural condition, it is logical to assume that the ditch has expended at least 70 percent (35 out of 50 years) of its useful life.

While it is not uncommon for smaller WWTPs to have only one oxidation ditch, these plants are typically planned so that additional ditches are constructed as the community grows. Because of the City's relatively low rate of residential growth, reliability concerns may trigger the need for another basin prior to the need for additional capacity.

2. Ability to Meet Effluent Nitrogen Limits during Cold Weather Periods

The City's summertime wastewater temperatures are typically over 20 degrees C but can be as low as 10 degrees C in the winter. At the lower temperatures, nitrifying bacteria activity is diminished by about a third from their normal rate. WWTPs can compensate for the reduced rates by increasing the amount of solids (bacteria) within the aeration basin during colder periods.

The ability of the existing ditch to meet the stringent ammonia limits year-round is being evaluated by reviewing operational data from last winter. The City did experience a prolonged cold period in January 2011 and effluent ammonia levels did in fact increase to near (but not above) the effluent limits. It is difficult to determine whether the instability was a result of the construction project that had just been completed or insufficient volume in the ditch for the bacteria to completely oxidize the ammonia in the water.

3. Ability to Meet Nitrogen Limits as the City Grows and the Flows Approach 1.67 mgd

The ditch currently provides simultaneous nitrification and denitrification within the same basin by cycling air on and off. While this appears to be working very effectively, it is difficult (and largely speculative) to project how well this will work as the loads increase to the 1.67 mgd capacity condition. Process modeling is well understood for conventional nitrification/ denitrification processes where there are separate compartments for nitrification (under aeration) and denitrification (no aeration). By turning air on and off, the operators are essentially making temporary, non-ideal zones that denitrify the wastewater that cannot be modeled. The City will likely continue to monitor each year's performance to determine if nitrogen removal efficiencies are reduced as wastewater load increases. Historically, City growth rates have been low enough that this approach would provide sufficient time to make whatever modifications are needed.

The City recently approved the Baltimore Ravine Specific Plan (BRSP). It has been estimated that at build-out of the BRSP, flows would be close to the WWTP's 1.67 mgd capacity. The Environmental Impact Report (EIR) for the BRSP envisioned that a second oxidation ditch would be needed to serve all City growth.

Recommended Approach

If the City is interested in mitigating these risks and adding another oxidation ditch process, the following approach is recommended:

1) Build the new oxidation ditch in a portion of Pond 4.

2) Provide the same peak flow hydraulic capacity to that of the tertiary processes (6.1 mgd). This will allow the City to never need to divert flows around the secondary process as it has had to during large storm events.

3) Build the new ditch to at least match the capacity of the existing ditch so the existing ditch can be taken out of service for rehabilitation.

4) When operated together, provide at least 2.0 mgd of capacity for planned City growth and complete logical accommodations so that up to 2.5 mgd (the reported ultimate build-out flows from the City) can be treated in the future. Such phasing can likely be accomplished by adding additional clarifiers at some point in the future.

5) Have the new ditch utilize separate nitrification and denitrification compartments as many of the conventional systems use. This process, called the "Modified Ludzack-Ettinger" (MLE) Process, is well-established, can be modeled, and provides robust nitrification and denitrification that will comply with the permit effluent nitrogen limitations.

A schematic concept of how the second oxidation ditch could be added to WWTP is provided in Figure 2. There are many different ways to configure the ditch "racetracks" and different aeration technologies. The configuration depicted in Figure 2 is a ditch that has been folded over so that it minimizes its footprint, 15 to 18 foot tall vertical concrete walls, two vertical aerators, and submersible mixers.

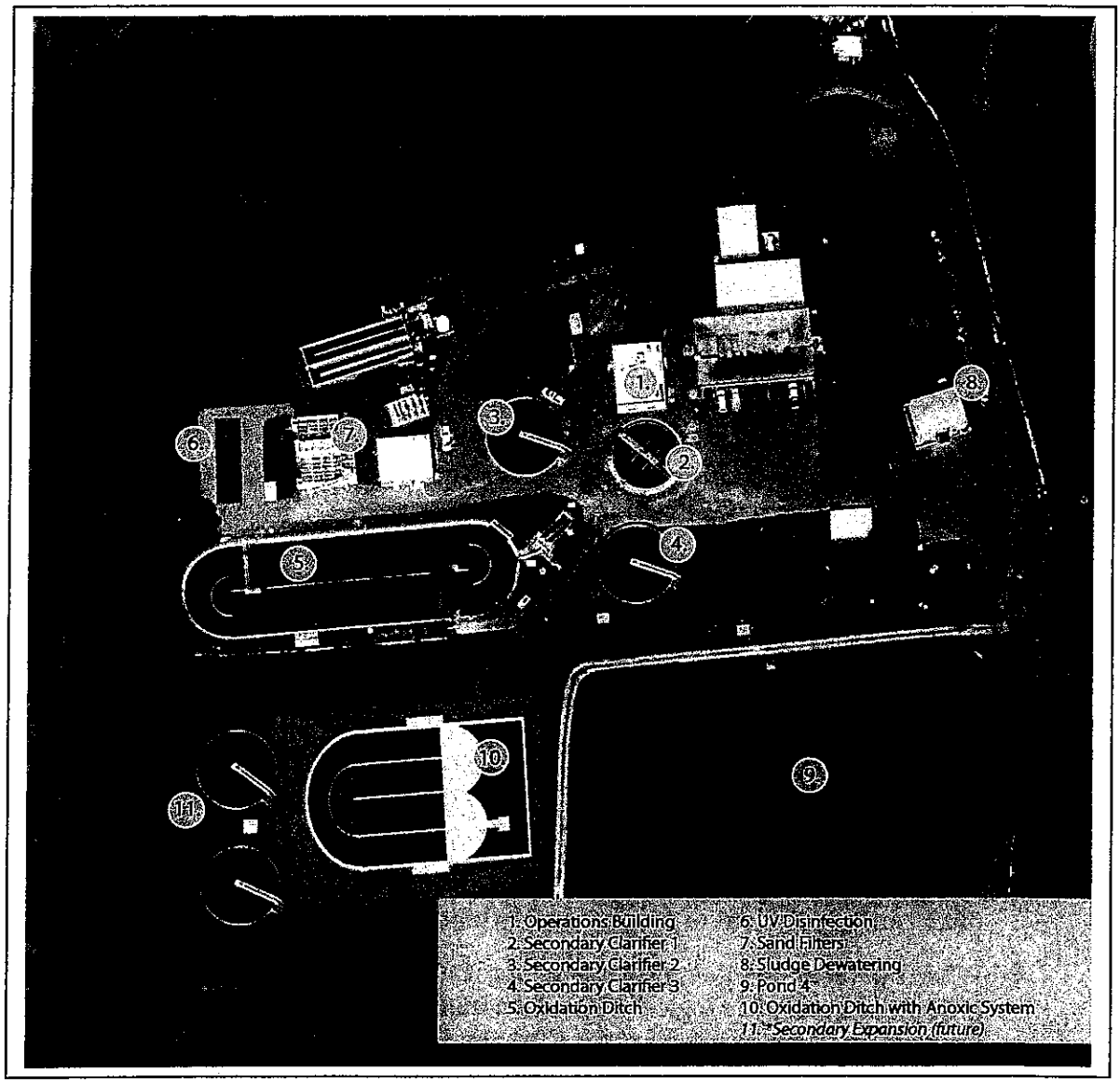

Figure 2
Schematic Layout of One Possible Option to Add a Second Oxidation Ditch

Budgetary Costs to Construct a Second Oxidation Ditch

Table 1 presents major task items, order of magnitude costs, and schedule needed to implement a second oxidation ditch. This schedule is consistent with the September 2014 milestone for full compliance listed in the City's C&D. Until completion of the pre-design, the total project has been budgeted at about $5,000,000 based on costs experienced at other WWTPs.

Table 1
Major Tasks, Budgetary Costs, and Schedule to Implement a Second Oxidation Ditch

Task	Budgetary Cost	Schedule Assuming Start in Summer of 2011
Pre-design Report (Surveying, Geotechnical Studies, Process Modeling, Preliminary Drawings, and Cost Estimate)	$125,000	Complete by Dec 2011
Approved Mitigated Negative Declaration Documentation	$25,000	Complete by March 2012
Financial Plan to Fund Improvements	$25,000	Complete by March 2012
Council approval to start design and fund project		April 2012
Final Design of Improvements	$400,000	Complete by Dec of 2012
Advertise, Bid, and Award Project	$25,000	Notice to Proceed April 2013
Project Construction and Construction Management (18 month duration assumed)	$4,200,000	Construction Complete by Sept 2014
Project Total	**$4,800,000**	

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